

1 3. (AMENDED) The substrate processing system of claim [1] 11 further
2 comprising a computer processor communicatively coupled to said impedance monitor so that
3 said computer processor receives as an input the measured impedance level of said plasma.

1 4. (UNCHANGED) The substrate processing system of claim 3 further
2 comprising a variable capacitor electrically coupled to said chamber and controllably coupled
3 to said processor wherein said processor adjusts a capacitance level of said variable capacitor
4 to vary the impedance of said plasma in response to an output of said impedance monitor.

1 5. (UNCHANGED) The substrate processing system of claim 3 further
2 comprising a pressure control system configured to control a pressure level within said
3 chamber and controllably coupled to said processor wherein said processor controls said
4 pressure control system to vary the pressure within the chamber in response to the measured
5 impedance level of said plasma.

1 6. (UNCHANGED) The substrate processing system of claim 3 wherein
2 said processor controls said plasma power source to vary the power applied to the plasma in
3 response to the measured impedance level of said plasma.

7. RESTRICTION REQUIREMENT.

8. RESTRICTION REQUIREMENT.

9. RESTRICTION REQUIREMENT.

10. RESTRICTION REQUIREMENT.

1 11. (UNCHANGED) A substrate processing system comprising:
2 a deposition chamber comprising a reaction zone;
3 a substrate holder that positions a substrate in the reaction zone;
4 said substrate holder comprising a low frequency (LF) electrode;
5 a gas distribution system that includes a gas inlet manifold for supplying one or
6 more process gases to said reaction zone;
7 said gas inlet manifold comprising a high frequency (HF) electrode;

8 a plasma power source for forming a plasma within the reaction zone of said
9 deposition chamber; and

10 an impedance monitor electrically coupled to said high frequency electrode and
11 said low frequency electrode.

1 12. (UNCHANGED) The substrate processing system of claim 11 further
2 comprising a variable capacitor electrically coupled to said LF electrode and controllably
3 coupled to said processor wherein said processor adjusts a capacitance level of said variable
4 capacitor to vary the impedance of said plasma in response to an output of said impedance
5 monitor.

1 13. (AMENDED) The substrate processing system of claim 11 further
2 comprising [**a variable capacitor**] an impedance tuner coupled in series to said pedestal.

1 14. (AMENDED) The substrate processing system of claim 13 wherein said
2 [**variable capacitor**] impedance tuner is coupled between said pedestal and a low frequency
3 RF generator.

1 15. CANCEL

1 16. (AMENDED) The substrate processing system of claim [14] 4 further
2 comprising a matching network coupled to a high frequency RF generator and said gas
3 manifold, wherein said matching network has capacitors that are different than said variable
4 capacitor.

1 17. (UNCHANGED) A substrate processing system comprising:
2 means for introducing one or more process gases into a reaction zone of a
3 substrate processing chamber;

4 means for forming a plasma from said one or more process gases;

5 means for maintaining the reaction zone at deposition conditions suitable to
6 deposit a layer from said one or more process gases;

7 means for monitoring an impedance level of said plasma; and

8 means for adjusting deposition conditions in the reaction zone in response to
9 said impedance level.

1 18. (AMENDED) A [means for depositing a film] substrate processing
2 system as set forth in claim 17 wherein said means for adjusting deposition conditions
3 comprises a variable capacitor electrically coupled to said processing chamber.--

Please add the following new claims:

1 --19. (NEW) The substrate processing system of claim 12, wherein said
2 impedance tuner includes a variable capacitor.

1 20. (NEW) The substrate processing system of claim 19 further comprising
2 a matching network coupled between said low frequency RF generator and said variable
3 capacitor, wherein said matching network includes capacitors that are different than said
4 variable capacitor.

1 21. (NEW) The substrate processing system of claim 11, further comprising
2 a high frequency power supply coupled to said high frequency electrode and a low frequency
3 power supply coupled to said low frequency electrode.--